

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
Amendment of the Commission's Rules to Promote Aviation Safety	)	WT Docket No. 19-140
	)	
WiMAX Forum Petition to Adopt Service Rules for the Aeronautical Mobile Airport Communications System (AeroMACS)	)	RM-11793
	)	
Petition of Sierra Nevada Corporation for Amendment of the Commission's Rules to Allow for Enhanced Flight Vision System Radar under Part 87	)	RM-11799
	)	
Petition of Aviation Spectrum Resources, Inc. for Amendment of Sections 87.173(b) and 87.263(a) of the FCC's Rules to Allow Use of the Lower 136 MHz Band by Aeronautical Enroute Stations	)	RM-11818
	)	
Petition of Airports Council International- North America Regarding Aeronautical Utility Mobile Stations	)	RM-11832

To: The Commission

**REPLY COMMENTS ON NOTICE OF PROPOSED RULEMAKING**

Aerospace and Flight Test Radio Coordinating Council, Inc. ("AFTRCC"), by its counsel, hereby submits these Reply Comments in connection with the Notice of Proposed Rulemaking in the above-captioned proceedings ("Notice" or "NPRM").<sup>1</sup>

**Background**

In its opening Comments, AFTRCC stressed the importance of access to the 5091-5150 MHz band for flight test purposes at the handful of airports which happen to be co-located with

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<sup>1</sup> FCC 19-53, released June 7, 2019.

aerospace manufacturing plants. In particular, AFTRCC supported the Commission's proposals to require individual, site-specific licensing for fixed/base stations and terrestrial mobile stations, in lieu of licensing by rule, and to require coordination by the FAA -- all in order to ensure aviation safety. AFTRCC further suggested that, if the Commission were to revisit the FAA coordination proposal in favor of a third party coordinator, it should in all events ensure that the coordinator is expert in aviation communications issues. AFTRCC also explained that AeroMACS deployment at the few airports co-located with aerospace plants should be deferred until AMT access at these locations is achieved; and that the concerned government agencies should establish reasonable sharing criteria.

## **Discussion**

AeroMACS proponents argue that applications should be licensed by rule, but point to no other aviation service, much less AM(R)S application, which is so licensed.<sup>2</sup> And for good reason: As the Commission succinctly stated, "AeroMACS is a safety of life service that requires strict license eligibility requirements and individualized coordination of each transmitter to ensure no interference to other AeroMACS links." Notice at para. 37 (emphasis added). As the Commission has also said, requiring coordination with the relevant FAA Regional Office prior to filing an application with the Commission, followed by consultation by the licensing staff with the FAA after the application is filed, is consistent with procedures the Commission already follows with respect to other airport operations, and will "expedite the licensing process." Notice at para. 39 (footnotes omitted). AFTRCC supports these proposals.

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<sup>2</sup> See, e.g., Comments of Celplan Technologies, Inc. at 3<sup>rd</sup> page; Comments of Eonti Inc. at page 4. At the same time, some AeroMACS proponents have acknowledged that AeroMACS is integrally related to the "safety and regularity of flight." WiMax Forum Comments at page 3. Moreover, to the extent AeroMACS has priority over AMT, it must be safety-related. If it is not, it would be inconsistent with the allocation and the FCC's rules, and also at odds with the priority.

AeroMACS equipment vendors and allied interests nonetheless argue that the Commission's proposals will be unduly burdensome, will reduce the spread of the (WiMax) technology, and are duplicative and unduly costly.<sup>3</sup> What these comments tend to ignore is the long-established licensing of Part 87 fixed/base stations of the AM(R)S-type on a site-specific basis following frequency coordination with the FAA in order to minimize the risk of interference to this safety spectrum. For example, these licensing-after-coordination fundamentals extend to:

- airport control tower stations (Rule 87.421, prescribing assignment of VHF frequencies "after coordination with the FAA");
- automatic weather stations (Rule 87.527, "[l]icenses will be granted only upon FAA approval," with notification to the Regional Office before the application is filed (Rule 87.529));
- aeronautical utility mobile stations (Rule 87.349; frequencies assigned for ground collision avoidance ("after coordination with the FAA," including notification to the FAA Regional Office before the application is filed); and
- radiodetermination stations (Rule 87.475; frequencies assigned "after coordination with the FAA" including, again, notification with the FAA Regional Office).

One AeroMACS proponent concedes that "such approaches typically enhance safety for aviation service operators," but goes on to say that "in this instance such a measured response would hamper users from realizing many of the benefits for which AeroMACS was designed."<sup>4</sup> However, the commenter offers no demonstration that standard aviation licensing principles would deter adoption of the technology (a notion in any event at odds with the verbiage about "imminent widespread deployment of AeroMACS"<sup>5</sup>) -- only conclusory assertions seemingly driven by marketing considerations.<sup>6</sup> More importantly, the commenter does not explain why

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<sup>3</sup> Ibid. Accord Comments of DigiCert, Inc. at page 3; Powertech Labs at page 4.

<sup>4</sup> Comments of the WiMax Forum at pages 9-10.

<sup>5</sup> Id. at pages 6-8.

<sup>6</sup> See, e.g., Comments of Airtel, Inc., at page 1 ("we see a solid market opportunity"); Comments of Convergenx Technologies at page 2 ("promote investments in AeroMACS products and services").

this approach would not, as with the other cases described above, enhance safety for aviation service operators.

But regardless, the Commission has not been unmindful of licensing flexibility for AeroMACS -- provided that can be accomplished without compromising safety. For example, the Notice proposes to license airborne AeroMACS transmitters under the operator's "existing aircraft station authorization, rather than to require a separate license." Notice at para. 37.<sup>7</sup> Nevertheless, while the Commission seeks "to avoid unnecessary regulation of aviators and equipment manufacturers, [it also keeps] foremost in mind the impact [its] decisions may have on safety of life and property in air navigation."<sup>8</sup>

The Forum itself acknowledges that there is little experience with AeroMACS at this time. It observes in its comments that "AeroMACS is in its nascent stages, [and] there is much to be learned about how it can best be deployed at the nation's airports . . . ."<sup>9</sup> For precisely this reason, the Commission should decline the invitation to take a leap with this new AM(R)S safety application and adopt an overly flexible licensing scheme; rather, it should err on the side of caution and maintain traditional, site-specific frequency coordination. If appropriate, this can be revisited later once the Commission and all concerned have experience with how AeroMACS systems are being deployed and used.<sup>10</sup>

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<sup>7</sup> The argument is made that the proposal in the Notice would entail non-Federal AeroMACS users providing both the coordinator and the Commission with technical data about their applications. Forum at pages 13-14. But this is typical for many business applications, and in any event is a small price to pay for aviation safety.

<sup>8</sup> *In the Matter of Part 87 of the Commission's Rules Concerning the Aviation Radio Service*, Report and Order, 18 FCC Rcd 21432 (2003) at para. 1.

<sup>9</sup> Forum Comments at p. 18.

<sup>10</sup> One commenter suggests that the service rules should allow the use of AeroMACS for off-airport operations, including "dense population centers" and cities. AiRXOS Inc. at p. 6. AeroMACS was authorized for airport surface communications, not a catch-all service to other geographic locations.

With respect to the qualifications for a possible third-party coordinator, other commenters, like AFTRCC, emphasize the importance of experience with aviation safety spectrum coordination:

With regard to channel management specifically, Collins recommends that an independent, neutral third party be established to act as the spectrum resources and allocation manager for the industry. The manager should be appointed on a nationwide basis to one entity. A strong model that the Commission could consider is that of the [aeronautical enroute service], which is managed by ASRI. This model has served the aviation industry well, especially with regard to VHF channel assignments.<sup>11</sup>

To like effect are ASRI's Comments:

As a safety service intended largely to provide mobile service to aircraft on the ground and to other mobile assets in support of such aircraft, ASRI agrees that AeroMACS should not be authorized under Part 95, but a more comprehensive licensing model. Licensing of ground-based stations will provide a point of contact and facilitate frequency management including the resolution of interference and congestion issues.

The licensee, however, should be well-versed in aeronautical communications and should be representative of the users of AeroMACS service. . . .

The use of a channel-manager licensee has worked well for decades in other contexts such as the aviation industry's management of the Aeronautical Mobile Route Service (i.e. with aeronautical enroute stations) by ASRI. This model has allowed aircraft operating entities to receive service from their own enroute facilities or those of communications service providers such as Collins Aerospace and SITA under licenses held by ASRI, which provides frequency management, station inspection, training, interference resolution, and planning support. An entity that is governed and given its remit by its own users ensures a flexible entity able to respond quickly to industry demands while self-controlling costs and other overhead.<sup>12</sup>

The intended users of AeroMACS will (ultimately) be airlines, general aviation operators, and airports. The need to manage spectrum use among a diversity of such users for

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<sup>11</sup> Collins Aerospace, at p. 7 (emphasis added).

<sup>12</sup> Comments of Aviation Spectrum Resources, Inc., at pages 7-8 (emphasis added); see also Comments of Aerospace Industries Association ("AIA"), 6th page ("if the Commission should consider a channel manager or managers, the selection criteria should focus on a demonstrated familiarity with complex safety-related aviation spectrum operations, and ideally a history of managing such operations").

safety-related communications will be a complex task. This should be kept in mind if the Commission opts for and establishes selection criteria for a third-party coordinator.

The WiMax Forum cites to the Commission's use of a frequency coordinator for Wireless Medical Telemetry and Medical Body Area Networks systems as a model for the Commission to follow here.<sup>13</sup> However, these applications involved hospitals, not the unique regulatory environment and coordination requirements traditionally associated with aviation. In this regard, experience with WiMax technology is a subordinate point compared to experience with coordination of aviation safety services.

AFTRCC and others supported the Commission's suggestion that AeroMACs deployment be deferred at airports co-located with aerospace manufacturing plants until a roadmap for joint use of the band by co-primary AMT is resolved.<sup>14</sup> Some oppose this suggestion. The argument is made that deferral would "have negative repercussions throughout America's airports due to the importance of network effects to the AeroMACS service."<sup>15</sup> That is, if AeroMACS deployment is delayed at even one airport, airlines serving that airport will have less reason to invest in AeroMACS equipment.

If that is so, the case for AeroMACS is tenuous indeed.<sup>16</sup> More basically, it is AFTRCC's understanding that AeroMACS will be deployed at airports with FAA control towers. According to the FAA's website, there are 518 such towers in the United States.<sup>17</sup> The twelve or so airports co-located with aerospace plants represent a miniscule two percent of the

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<sup>13</sup> Comments at pages 11-12.

<sup>14</sup> AIA Comments, at 5<sup>th</sup> page; Boeing Comments at page 14.

<sup>15</sup> Forum Comments at page 21.

<sup>16</sup> The argument is also belied by text repeatedly touting growing "momentum" for AeroMACS. Forum Comments at pages 1, 6 - 8, 12, and 23. It is difficult to square the 'network effects' argument with these numerous assertions.

<sup>17</sup> [https://www.faa.gov/air\\_traffic/by\\_the\\_numbers/](https://www.faa.gov/air_traffic/by_the_numbers/). The same website notes that aviation contributes 5.1 percent of U.S. gross domestic product, and generates 10.6 million jobs.

total. The notion that AeroMACS deployment and success in the marketplace depends on these twelve as opposed to the other five hundred, is baseless.

As a closing point, it is worth reiterating that AeroMACS is allocated, and has priority over AMT, only for safety-related aviation operations. To any extent AeroMACS might be operated for non-safety related purposes, that would be plainly inconsistent with the allocation and the FCC's rules. It would also be without any priority over aeronautical mobile telemetry. This is just one more reason for both ensuring that the coordinator has experience requisite to the task of implementing assignments for safety-related aviation frequencies, and for deferring AeroMACS use of 5091-5150 MHz at the very few airports where AeroMACS and AMT operations would be collocated until joint arrangements for use of the band are developed.

#### **Conclusion**

Accordingly, for the foregoing reasons, AeroMACS service rules should be adopted in accordance with AFTRCC's opening Comments and these Reply Comments.

Respectfully submitted,

**AEROSPACE AND FLIGHT TEST RADIO  
COORDINATING COUNCIL, INC.**

By:   
William K. Keane

Duane Morris LLP  
505 9<sup>th</sup> Street NW  
Suite 1000  
Washington, D.C. 20004  
(202) 776-5243

*Its Counsel*

September 30, 2019